ABSTRACT

An improved hands-free speaker telephone designed to provide high-quality sound in a relatively small instrument, while at the same time avoiding acoustic shock to a user pressing the device too closely to an ear. If a speakerphone is mistaken for an ordinary portable or cellular phone, or simply out of misguided habit, a user may intentionally or inadvertently press the speaker against an ear. This action may subject the ear to an overly-loud audio event if the speaker begins producing sound, as hands-free speakerphone speakers are typically set to a much higher volume than those of ordinary phones. The effect, which is sometimes referred to as 'acoustic shock', is worsened significantly where the user actually succeeds in sealing the phone around the ear, as commonly (and harmlessly) occurs with standard (personal) phones. To avoid this undesirable phenomenon, the hands-free speakerphone is provided with a seal-proof speaker configuration. The seal-proof design includes various anti-sealing features that may be used individually or in combination. The anti-sealing features of the present invention include a housing for the hands-free speakerphone comprising two main parts that fit together to enclose the actual speaker element. The two housing parts are joined in such a way as to crate a parting line, or recess running along the exterior of the assembled speakerphone. Sound ports that permit the sound generated by the speaker element are located along the parting line, which prevents the user's ear from forming an air-locked cavity containing them. The speaker ports may also be located on a surface of the speakerphone that is curved to the extent that forming such a seal would be difficult or impossible. The ports themselves may be hidden so that the user does not attempt to hold them to an ear at all. Finally, the sound ports are preferable spaced apart such that even if the user does so, fewer than all of the speaker ports would be included in the area the user is attempting to seal to an ear.